

ESSEX COUNTY COLLEGE
Social Sciences Division
CJI 210 – Forensic Evidence
Course Outline

Course Number & Name: CJI 210 Forensic Evidence

Credit Hours: 3.0 **Contact Hours:** 3.0 **Lecture:** 3.0 **Lab:** N/A **Other:** N/A

Prerequisites: Grade of “C” or better in CJI 101

Co-requisites: None

Concurrent Courses: None

Course Outline Revision Date: Fall 2010

Course Description: This is an introductory course on the application of physical, chemical, behavioral, medical, and biological sciences to physical evidence used to explain or solve civil and/or criminal law cases. This course explores the collection, examination, evaluation, and interpretation of physical evidence. Emphasis is placed on lecture and demonstration.

Course Goals: Upon successful completion of this course, students should be able to do the following:

1. explain the history and development of forensic science;
2. evaluate what constitutes appropriate and admissible evidence in criminal investigation;
3. categorize the various types of evidence usually found at the scene of a crime and describe generally accepted methods of collection;
4. describe the types of forensic evidence currently allowed in both federal and state courts;
5. explain how fingerprint evidence is used in criminal cases;
6. explain the usefulness of nature and state of decomposition evidence in criminal cases;
7. explain how ballistic evidence is used in criminal cases;
8. explain how blood-related evidence is used in criminal cases;
9. explain how trace evidence is used in criminal cases;
10. demonstrate critical thinking skills within the context of evaluating the complexity of evidence issues; and
11. communicate effectively with accurate ‘criminal justice’ terminology in written and/or oral form.

Measurable Course Performance Objectives (MPOs): Upon successful completion of this course, students should specifically be able to do the following:

1. Explain the history and development of forensic science:
 - 1.1 *define forensic science or criminalistics;*
 - 1.2 *explain the importance of the work of various forensics pioneers;*
 - 1.3 *recall the major contributors to the development of forensic science;*
 - 1.4 *give examples of typical crime laboratories as they exist on the national, state, and local levels of government in the United States;*
 - 1.5 *describe the services of a typical comprehensive crime laboratory in the criminal justice system;*
 - 1.6 *explain the different approaches espoused by the Frye and Daubert decisions to the admissibility of scientific evidence in the courtroom;*
 - 1.7 *explain the role and responsibilities of the expert witness; and*
 - 1.8 *discuss the proper collection and packaging of common types of physical evidence*

2. Evaluate what constitutes appropriate and admissible evidence in criminal investigation:
 - 2.1 *define physical evidence;*
 - 2.2 *discuss the responsibilities of the first police officer who arrives at a crime scene;*
 - 2.3 *explain the steps to be taken for thoroughly recording the crime scene (photography, sketches, notes);*
 - 2.4 *identify the procedures for processing a crime scene;*
 - 2.5 *describe proper procedures for conducting a systematic search of crime scenes for physical evidence (victims clothing, trace, fingernail scrapings, hair, blood, bullets, etc.);*
 - 2.6 *describe proper techniques for packaging common types of physical evidence to avoid cross-contamination;*
 - 2.7 *define chain of custody;*
 - 2.8 *discuss the steps that are typically required to maintain appropriate health and safety standards at the crime scene;*
 - 2.9 *discuss the implications of the Mincey and Tyler cases; and*
 - 2.10 *explain the reasons for isolating and protecting a crime scene from outside contamination*

3. Categorize the various types of evidence usually found at the scene of a crime and describe generally accepted methods of collection:
 - 3.1 *describe the nature of real evidence;*
 - 3.2 *explain the conditions under which real evidence is relevant;*
 - 3.3 *explain the authentication procedure for real evidence;*
 - 3.4 *describe how the chain of custody is preserved;*
 - 3.5 *describe how forensic experts use DNA fingerprinting to solve crimes;*
 - 3.6 *list the common types of physical evidence encountered at crime scenes;*
 - 3.7 *explain the difference between the identification and comparison of physical evidence;*
 - 3.8 *define individual and class characteristics and give examples of physical evidence possessing these characteristics;*
 - 3.9 *discuss the value of class evidence to a criminal investigation;*
 - 3.10 *list the number and types of computerized databases relating to physical evidence that are currently in existence; and*
 - 3.11 *distinguish between the contributions the forensic pathologist, forensic anthropologist, and forensic entomologist can make to a death investigation*

Measurable Course Performance Objectives (MPOs) (continued):

4. Describe the types of forensic evidence currently allowed in both federal and state courts:
 - 4.1 *identify real evidence and the necessary prerequisites for admissibility of this kind of evidence;*
 - 4.2 *describe the relationship of forensics and the law;*
 - 4.3 *explain the relevance of specific court cases to current forensics practices;*
 - 4.4 *describe typical courtroom proceedings;*
 - 4.5 *describe how the development of technology is important to forensics;*
 - 4.6 *explain the importance of Locard's "Exchange Principle" of evidence; and*
 - 4.7 *identify expert witnesses and the necessary prerequisites for admissibility of this kind of evidence*
 - *explain the nature of an expert*
 - *explain the admissibility of expert evidence*
 - *explain the term "ultimate issue doctrine"*
 - *describe the necessary qualifications of the expert*
 - *demonstrate the preparation of an expert for trial using role play*
 - *demonstrate the cross-examination and impeachment of an expert using role play*

5. Explain how fingerprint evidence is used in criminal cases:
 - 5.1 *identify the basic types of fingerprint classification;*
 - 5.2 *describe the types of fingerprints found;*
 - 5.3 *describe the reasons and importance of fingerprint databases; and*
 - 5.4 *describe the methods of retrieving latent fingerprints*

6. Explain the usefulness of nature and state of decomposition evidence in criminal cases:
 - 6.1 *describe the nature of death and decomposition;*
 - 6.2 *explain how determining time of death relates to decomposition;*
 - 6.3 *explain how cause of death is determined; and*
 - 6.4 *describe the detailed nature of an autopsy*

7. Explain how ballistic evidence is used in criminal cases:
 - 7.1 *identify the four basic types of guns;*
 - 7.2 *describe the types and uses of different bullets;*
 - 7.3 *describe the use of serial numbers for guns and bullets; and*
 - 7.4 *describe how powder burns are used to gauge the distance of the shooter from the victim*

8. Explain how blood-related evidence is used in criminal cases:
 - 8.1 *describe the various components of blood and the evidence each part contains;*
 - 8.2 *describe the nature of blood type, and its relative importance as evidence;*
 - 8.3 *describe different blood stain patterns based on source, direction, and angle of trajectory;*
 - 8.4 *explain the method of chemically isolating old, invisible blood stains;*
 - 8.5 *describe the parts of a hair;*
 - 8.6 *explain the lack of evidentiary value in hair comparisons;*
 - 8.7 *describe the nature of introns and exons in the human genome;*
 - 8.8 *explain the importance of various DNA markers to criminal investigations; and*
 - 8.9 *describe the methods of DNA collection, amplification, and analysis*

Measurable Course Performance Objectives (MPOs) (continued):

9. Explain how trace evidence is used in criminal cases:
 - 9.1 *describe the basic types of fibers in use today;*
 - 9.2 *explain “energy of deformation”; and*
 - 9.3 *describe the types of tool marks*

10. Demonstrate critical thinking skills within the context of evaluating the complexity of evidence issues:
 - 10.1 *analyze a fact scenario and determine if the exclusionary rule applies;*
 - 10.2 *describe the significance of the “weight of evidence” for items obtained during a criminal investigation;*
 - 10.3 *evaluate admissibility of various types of evidence;*
 - 10.4 *evaluate the nature of forensics both with and without certain technologies;*
 - 10.5 *evaluate types of evidence law enforcement should search for in specific crimes;*
 - 10.6 *evaluate the use of certain types of evidence in course proceedings;*
 - 10.7 *determine the cause of death and injuries in given case studies; and*
 - 10.8 *use critical thinking and problem solving, focusing on the criminal justice system and analyzing information from multiple sources, including print and video media*

11. Communicate effectively with accurate ‘criminal justice’ terminology in written and/or oral form:
 - 11.1 *utilize effective and persuasive communication skills in written and/or oral form; and*
 - 11.2 *use accurate ‘criminal justice’ terminology in writings and oral presentations*

Methods of Instruction: Instruction will consist of, but not be limited to, a combination of lectures, class discussions, multi-media presentations, group projects, the assignment of textbook readings and other resource material, case studies, demonstrations, and completion of various assessment instruments (a documented research paper, and both in-class and take-home tests and exams). Specific choice of instructional methods is left to the discretion of the instructor.

Outcomes Assessment: Quiz and exam questions (if applicable) are blueprinted to course objectives. Checklist rubrics are used to evaluate non-test type assessment instruments, such as case studies, presentations, logs, journals, and papers, for the presence of course objectives. Data collected will be analyzed to provide direction for the improvement of instruction, viability of class assignments, relevancy of assigned literature, and evaluation of instructional time spent on specific topics.

Course Requirements: All students are required to:

1. Maintain regular attendance.
2. Actively participate in class discussions and workshops.
3. Read the recommended textbook and any other assigned resource materials.
4. Complete all assigned homework on time.
5. Complete all written assignments, including a research paper based on multiple source research gleaned from appropriate library sources and previously published internet sources.
6. Complete an in-class midterm and final examination.
7. Take all quizzes and exams when scheduled.
8. Follow any specific class requirements mandated by the instructor.

Methods of Evaluation: Final course grades will be computed as follows:

Grading Components	% of final course grade
<ul style="list-style-type: none">• Attendance/Class Participation Attendance points will be computed based on the ratio of the number of days attending the course during a regular semester (i.e., 28 contact days). A similar procedure will be used to determine participation points.	5 – 15%
<ul style="list-style-type: none">• Logs/Journals Logs/Journals are written exercises designed to heighten student’s awareness of various events related to criminal justice that is experienced, observed, read, or viewed on television. Student must relate experiences to chapters either discussed/not discussed throughout the semester.	10 – 15%
<ul style="list-style-type: none">• Reaction Papers Reaction papers are 3 – 5 page written exercises in which students read outside sources or statements supplied by the professor and discuss their “intellectual and emotional” reaction to the issue or author’s point of view, yet use critical thinking guidelines to take a position and support that position using scholarly literature, interviews and polling.	15 – 20%
<ul style="list-style-type: none">• Theme Papers Theme papers are 3 – 5 page written exercises in which students discuss how taking the course has been personally meaningful, beneficial, and relevant to their future professional aspirations. References can be cited using scholarly journals, criminalistic, legal and law enforcement sources, or internet sites.	20 – 25%

Methods of Evaluation (continued):

Grading Components	% of final course grade
<ul style="list-style-type: none">• Literature Reviews/Research Papers Literature reviews/research papers are written exercise in which students must investigate a particular topic either in the textbook or assigned by the instructor that is related to the course objectives and conduct a review of the criminalistic literature, case law, or statutes. Based on the literature review, students are required to develop a thesis/theme and draw conclusions on the topic researched.	10 – 20%
<ul style="list-style-type: none">• Introspective Theme Paper/Case Study Analysis The introspective theme paper/case study analysis is a 7 – 10 page written exercise in which students integrate and synthesize concepts to perform an in-depth analysis and demonstrate relevance and admissibility of evidence. The students must analyze, synthesize, integrate, and demonstrate relevance of concepts to course objectives.	30 – 40%
<ul style="list-style-type: none">• Written/Oral Presentation Interview of Law Enforcement Agency or Professional in the Field The written/oral presentation of the interview of the agency representative or legal professional requires the student to gather information and to determine its relevance to concepts and theories presented in class which are related to course objectives.	15 – 25%
<ul style="list-style-type: none">• Oral Presentations Oral presentations are based on a topic either discussed/not discussed during the semester that is relevant to the study of criminal law or forensic evidence and related to course objectives. The instructor may require a written outline to augment the oral presentation.	15 – 20%
<ul style="list-style-type: none">• Quizzes Quizzes will provide evidence of the extent to which students have met course objectives.	10 – 15%
<ul style="list-style-type: none">• Exams, including Midterm and Final Exams (number of exams and dates specified by the instructor) Exams will provide evidence of the extent to which students have mastered and synthesized course material and have met course objectives.	20 – 30%

NOTE: The instructor will determine (as appropriate) the specific components for the course and provide specific weights which lie in the above given ranges at the beginning of the semester.

Academic Integrity: Dishonesty disrupts the search for truth that is inherent in the learning process and so devalues the purpose and the mission of the College. Academic dishonesty includes, but is not limited to, the following:

- plagiarism – the failure to acknowledge another writer’s words or ideas or to give proper credit to sources of information;
- cheating – knowingly obtaining or giving unauthorized information on any test/exam or any other academic assignment;
- interference – any interruption of the academic process that prevents others from the proper engagement in learning or teaching; and
- fraud – any act or instance of willful deceit or trickery.

Violations of academic integrity will be dealt with by imposing appropriate sanctions. Sanctions for acts of academic dishonesty could include the resubmission of an assignment, failure of the test/exam, failure in the course, probation, suspension from the College, and even expulsion from the College.

Student Code of Conduct: All students are expected to conduct themselves as responsible and considerate adults who respect the rights of others. Disruptive behavior will not be tolerated. All students are also expected to attend and be on time for all class meetings. No cell phones or similar electronic devices are permitted in class. Please refer to the Essex County College student handbook, *Lifeline*, for more specific information about the College’s Code of Conduct and attendance requirements.

Course Content Outline: based on the text by Saferstein, Richard (2011). *Criminalistics: An Introduction to Forensic Science* (10th edition). Upper Saddle River, NJ: Pearson/Prentice Hall.

Additional Resource: Gardner, Thomas & Anderson, Terry (2009). *Criminal Evidence: Principles and Cases* (7th edition). Belmont, CA: Wadsworth, a division of Thomson.

Unit	Topic/Content	Readings
1	Introduction	ch 1
2	The Crime Scene	ch 2
3	Physical Evidence	ch 3
4	Physical Properties: Glass and Soil	ch 4
5	Organic Analysis	ch 5
6	Inorganic Analysis	ch 6
7	The Microscope	ch 7
8	Drugs	ch 8
9	Forensic Toxicology	ch 9
10	Forensic Serology	ch 10
11	DNA: The Indispensable Forensic Science Tool	ch 11
12	Crime Scene Reconstruction: Bloodstain Pattern Analysis	ch 12
13	Hairs, Fibers, and Paint	ch 13
14	Forensic Aspects of Fire Investigation	ch 14
15	Forensic Investigation of Explosions	ch 15
16	Fingerprints	ch 16
17	Firearms, Tool Marks, and Other Impressions	ch 17
18	Document Examination	ch 18
19	Computer Forensics	ch 19

NOTE: In CJ1 210, the instructor must cover the 19 units listed above minimally in any reasonable order throughout the duration of the semester/term. Also, the instructor may include additional areas based on his/her expertise and/or interest.